cytosine bases (CCCC) within the target molecule or alternatively four or more consecutive elements of GGGG,

the oligonucleotide does also not contain 2 or more series of three consecutive elements, capable of forming three hydrogen bonds each with three consecutive cytosine bases (CCC) within the target molecule, or alternatively 2 or more series of three consecutive elements of GGG, and

the ratio between residues forming two hydrogen bonds per residue (2H-bond-R) with the target molecule and those residues forming three hydrogen bonds per residue (3H-bond-R) with the target molecule, is ruled by the following specifications:

E' (cont'd)

$$\frac{\text{3H-bond-R}}{\text{3H-bond-R + 2H-bond-R}} \geq 0.29$$

and synthesizing the oligonucleotide thus generated in a per se known manner.

36. The method according to claim 35, wherein the generated oligonucleotide complies with the following specification

$$\frac{\text{3H-bond-R}}{\text{3H-bond-R + 2H-bond-R}} = 0.33 \text{ to } 0.86.$$

37. The method according to claim 35, wherein the generated oligonucleotides are modified for higher nuclease resistance than naturally occurring oligo- or polynucleotides.

38. The method according to claim 37, wherein the generated oligonucleotides are modified at the bases, the sugars or the linkages of the oligonucleotides, preferably by phosphorothioate (S-ODN) internucleotide linkages, and/or methylphosphonate internucleotide linkages, N'3 -> P5' phosphoramidate linkages, peptide linkages or 2'-methoxyethoxy modifications of the sugar or modifications of the bases.

39. The method according to claim 38, wherein the oligonucleotide has at least two different types of modifications.

40. The method according to claim 35, wherein the oligonucleotides are reacted with folic acid, hormones such as steroid hormones or corticosteroids or derivatives thereof by linking the oligonucleotides covalently to or mixing with folic acid, hormones such as steroid hormones or corticosteroids, peptides, proteoglycans, glycolipids or phospholipids.

41. An antisense oligonucleotide or derivative thereof obtainable according to the method according to claim 35 except oligonucleotides represented by SEQ ID NOS: 826-1272.

42. The oligonucleotide or derivative of claim 41, which does not contain four or more consecutive guanosine (N_aGGGGN_b) or inosine (N_aIIIIN_b) residues and the oligonucleotide does not contain two or more series of three or more consecutive guanosine residues ($N_aGGGN_cGGGN_b$) and does not contain two or more series of three or more consecutive inosine residues ($N_aIIIN_cIIIN_b$), wherein N_a, N_b, N_c represent independently nucleotides or oligonucleotides or derivatives thereof having 0 to 20 residues.

43. The oligonucleotide or derivative of claim 41, comprising a minimum of ten elements and a maximum of 41 elements capable of forming either two or three hydrogen bonds per element.

E (cont'd)

44. The oligonucleotide or derivative according to claim 41, having modifications at the bases, the sugars or the phosphate moieties of the oligonucleotides.

45. The oligonucleotide or derivative of claim 41, wherein the modifications are phosphorothioate (S-ODN) internucleotide linkages, and/or methylphosphonate internucleotide linkages, N'3 -> P5' phosphoramidate linkages, peptide linkages or 2--methoxyethoxy modifications of the sugar or modifications of the bases.

46. The oligonucleotide or derivative of claim 41 coupled to or mixed with folic acid, hormones, steroid hormones such as oestrogene, progesterone, corticosteroids, mineral corticoids, peptides, proteoglycans, glycolipids, phospholipids and derivatives therefrom.

47. The oligonucleotide according to claim 41, wherein the antisense oligonucleotide against the TGF-β1 gene comprise SEQ ID NOS: 41 to 73, the oligonucleotides against the gene p53 comprise SEQ ID NOS: 74 to 106, the antisense oligonucleotides against junB comprise SEQ ID NOS: 154 to 172 , the antisense oligonucleotides against junD comprise SEQ ID NOS: 173 to 203 , the antisense oligonucleotides against the erbB-2 gene comprise SEQ ID NOS: 298 to 380 , the antisense oligonucleotides against c-fos genes comprise SEQ ID NOS: 476-506; the antisense oligonucleotides against the gene TGF-β2 comprise SEQ ID NOS: 519 to 556 as well as the antisense oligonucleotides against the gene rb comprise SEQ ID NOS: 597 to 641, as well as SEQ ID NOS: 1273 to 1764.

E (cont'd)

48. A composition comprising an oligonucleotide or derivative according to claim 41 for the manufacturing of a medicament or a composition for the inhibition of the genes p53, rb, junD, junB. TGF-β1, TGF-β2 to influence cell proliferation, in particular of primary cell cultures such as liver cells, kidney cells, osteoclasts, osteoblasts and/or keratinocytes and/or cells of the blood lineage, such as bone marrow stem cells, and/or progenitor cells of red and white blood cells.

49. A medicament comprising an oligonucleotide according to claim 41 together with additives.

50. The use of the oligonucleotides according to claim 41 for the preparation of a medicament for the prevention or the treatment of neoplasm, hypoproliferation, hyperproliferation,